MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2022/2023 (TERM ID 2210)

DOM5214 – OPERATIONS MANAGEMENT

(All Sections)

7 FEBRUARY 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **TEN (10)** pages (excluding the cover page)
2. Answer **ALL** questions.
3. The marks allocation is given in the parentheses.

PART A: Multiple Choice Questions (60 marks)

1. Productivity increases when:

   A. inputs increase while outputs remain the same.
   B. inputs decrease while outputs remain the same.
   C. outputs decrease while inputs remain the same.
   D. inputs and outputs increase proportionately.

2. Services often:

   A. are tangible.
   B. are standardized.
   C. are knowledge based.
   D. are low in customer interaction.

3. A mission statement is beneficial to an organization because it:

   A. is a statement of the organization's purpose.
   B. provides a basis for the organization's culture.
   C. identifies important constituencies.
   D. details specific income goals.

4. A company that is organized across international boundaries, with decentralized authority and substantial autonomy at each business via subsidiaries, franchises, or joint ventures, has:
   A. a global strategy.
   B. a transnational strategy.
   C. an international strategy.
   D. a multidomestic strategy.

5. Which of the following statements regarding Gantt charts is true?
   A. Gantt charts give a timeline and precedence relationships for each activity of a project.
   B. Gantt charts use the four standard spines: Methods, Materials, Manpower, and Machinery.
   C. Gantt charts are visual devices that show the duration of activities in a project.
   D. Gantt charts are expensive.

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6. The critical path of a network is the:
   A. Shortest-time path through the network.
   B. Path with the fewest activities.
   C. Path with the most activities.
   D. Longest-time path through the network.

7. PERT analysis computes the variance of the total project completion time as:
   A. The sum of the variances of all activities in the project.
   B. The sum of the variances of all activities on the critical path.
   C. The sum of the variances of all activities not on the critical path.
   D. The variance of the final activity of the project.

8. Forecasting time horizons include:
   A. Long range.
   B. Medium range.
   C. Short range.
   D. All of the above.

9. Three popular measures of forecast accuracy are:
   A. Total error, average error, and mean error.
   B. Average error, median error, and maximum error.
   C. Median error, minimum error, and maximum absolute error.
   D. Mean absolute deviation, mean squared error, and mean absolute percent error.

10. A product's life cycle is divided into four stages, including:
   A. Introduction.
   B. Growth.
   C. Maturity.
   D. All of the above.

11. Product development systems include:
   A. Bills of material.
   B. Routing charts.
   C. Functional specifications.
   D. Product-by-values analysis.

12. A house of quality is:
   A. a matrix relating customer "wants" to the firm's "hows."
   B. a schematic showing how a product is put together.
   C. a list of the operations necessary to produce a component.
   D. an instruction to make a given quantity of a particular item.

Continued...

13. Products are defined by:
    A. Value analysis.
    B. Value engineering.
    C. Routing sheets.
    D. Engineering drawings.

14. Decision trees use:
    A. Probabilities.
    B. Payoffs.
    C. Logic.
    D. All of the above.

15. Corporate social responsibility for organisation includes:
    A. Doing what's right.
    B. Having policies that consider environmental, societal, and financial impact.
    C. Considering a product from design to disposal.
    D. All of the above.

16. Sustainability deals:
    A. Solely with green products, recycling, global warming, and rain forests.
    B. With keeping products that are not recyclable.
    C. With meeting the needs of present and future generations.
    D. With three views—systems, commons, and defects.

17. The 3*R*s of sustainability are:
    A. reputation, reuse, reduce.
    B. reputation, recycle, reuse.
    C. reputation, reverse logistics, renewal.
    D. reuse, reduce, recycle

18. The process of identifying other organizations that are best at some facet of your operations and then modeling your organization after them is known as:
    A. Continuous improvement.
    B. Employee empowerment.
    C. Benchmarking.
    D. Copycatting

19. The Taguchi method includes all except which of the following major concepts?
    A. Employee involvement
    B. Remove the effects of adverse conditions
    C. Quality loss function
    D. Target specifications

Continued...

20. *Quality* is defined as:
    A. How well a product fits patterns of consumer preferences.
    B. The degree of excellence at an acceptable price and the control of variability at an acceptable cost
    C. Being impossible to define, but you know what it is.
    D. The totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs.

21. If the mean of a particular sample is within control limits and the range of that sample is not within control limits:
    A. The process is in control, with only assignable causes of variation.
    B. The process is not producing within the established control limits.
    C. The process is producing within the established control limits, with only natural causes of variation.
    D. The process has both natural and assignable causes of variation.

22. The central limit theorem:
    A. is the theoretical foundation of the *c*-chart.
    B. states that the average of assignable variations is zero.
    C. allows managers to use the normal distribution as the
    D. states that the average range can be used as a proxy for the standard deviation.

23. The type of chart used to control the central tendency of variables with continuous dimensions is:
    A. *x*-chart.
    B. *R*-chart.
    C. *p*-chart.
    D. *c*-chart.

24. If parts in a sample are measured and the mean of the sample measurement is outsi the control limits:
    A. The process is out of control, and the cause should be established.
    B. The process is in control but not capable of producing within the established control limits.
    C. The process is within the established control limits, with only natural causes of variation.
    D. All of the above are true.

25. The ability of a process to meet design specifications is called:
    A. Taguchi.
    B. process capability.
    C. capability index.
    D. acceptance sampling.

Continued...

26. Low-volume, high-variety processes are also known as:
    A. Continuous processes.
    B. Process focused.
    C. Repetitive processes.
    D. Product focused.

27. A crossover chart for process selection focuses on:
    A. Labor costs.
    B. Material cost.
    C. Both labor and material costs.
    D. Fixed and variable costs.

28. Capacity decisions should be made on the basis of:
    A. Building sustained competitive advantage.
    B. Good financial returns.
    C. A coordinated plan.
    D. All of the above

29. Effective capacity is:
    A. The capacity a firm expects to achieve, given the current operating constraints.
    B. The percentage of design capacity actually achieved.
    C. The percentage of capacity actually achieved.
    D. Actual output.

30. System capacity is based on:
    A. The bottleneck.
    B. Throughput time.
    C. Time of the fastest station.
    D. Throughput time plus waiting time.

31. The break-even point is:
    A. Adding processes to meet the point of changing product demands.
    B. Improving processes to increase throughput.
    C. The point in dollars or units at which cost equals revenue.
    D. Adding or removing capacity to meet demand.

32. The expected monetary value is most appropriate:
    A. When the payoffs are equal.
    B. When the probability of each decision alternative is known.
    C. When probabilities are the same.
    D. When both revenue and cost are known.

Continued...

33. Net present value:
    A. is greater if cash receipts occur later rather than earlier.
    B. is greater if cash receipts occur earlier rather than later.
    C. is revenue minus fixed cost.
    D. is preferred over break-even analysis.

34. The factors involved in location decisions include
    A. Foreign exchange.
    B. Attitudes.
    C. Labour productivity.
    D. All of the above.

35. If Fenderico Guitar pays RM 30 per day to a worker in its Selama Perak plant, and 1 employee completes four instruments per 8-hour day, the labor cost/unit is
    A. RM 30.00.
    B. RM 3.75.
    C. RM 7.50.
    D. RM 4.00.

36. Evaluating location alternatives by comparing their composite (weighted avera scores involves
    A. Factor-rating analysis.
    B. Cost–volume analysis.
    C. Transportation model analysis.
    D. Linear regression analysis.

37. What is the major difference in focus between location decisions in the service sector and in the manufacturing sector?
    A. There is no difference in focus.
    B. The focus in manufacturing is revenue maximization, while the focus in service is cost minimization.
    C. The focus in service is revenue maximization, while the focus in manufacturing is cost minimization.
    D. The focus in manufacturing is on raw materials, while the focus in service is on labour.

i38. Which of the statements below best describes *office layout*?
    A. Groups workers, their equipment, and spaces/offices to provide for movement of information.
    B. Addresses the layout requirements of large, bulky projects such as ships and buildings.
    C. Seeks the best personnel and machine utilization in repetitive or continuc production.
    D. Allocates shelf space and responds to customer behaviour.

Continued...

39. The major problem addressed by the warehouse layout strategy is:
    A. Minimizing difficulties caused by material flow varying with each product.
    B. Requiring frequent contact close to one another.
    C. Addressing trade-offs between space and material handling. balancing product flow from one workstation to the next.
    D. None of the above.

40. A fixed-position layout:
    A. Groups workers to provide for movement of information.
    B. Addresses the layout requirements of large, bulky projects such as ships and buildings.
    C. Seeks the best machine utilization in continuous production.
    D. Allocates shelf space based on customer behaviour.

41. A process-oriented layout:
    A. Groups workers to provide for movement of information.
    B. Addresses the layout requirements of large, bulky projects such as ships and buildings.
    C. Seeks the best machine utilization in continuous production.
    D. Deals with low-volume, high-variety production.

42. The difference between *job enrichment* and *job enlargement* is that:
    A. Enlarged jobs contain a larger number of similar tasks, while enriched jobs include some of the planning and control necessary for job accomplishment.
    B. Enriched jobs contain a larger number of similar tasks, while enlarged jobs include some of the planning and control necessary for job accomplishment.
    C. Enriched jobs enable an employee to do a number of boring jobs instead of just one.
    D. All of the above.

43. The work environment includes these factors:
    A. Lighting, noise, temperature, and air quality
    B. Illumination, carpeting, and high ceilings
    C. Enough space for meetings and videoconferencing
    D. Noise, humidity, and number of co-workers

44. The least preferred method of establishing labour standards is:
    A. Time studies.
    B. Work sampling.
    C. Historical experience.
    D. Predetermined time standards.

Continued...

45. To set the required sample size in a time study, you must know:
    A. The number of employees.
    B. The number of parts produced per day.
    C. The desired accuracy and confidence levels.
    D. Management's philosophy toward sampling.

46. The term *vertical integration* means to:
    A. Develop the ability to produce products that complement or supplement the original product.
    B. Produce goods or services previously purchased.
    C. Develop the ability to produce the specified good more efficiently.
    D. All of the above.

47. The bullwhip effect can be aggravated by:
    A. Local optimization.
    B. Sales incentives.
    C. Quantity discounts.
    D. All of the above.

48. Supplier selection requires:
    A. Supplier evaluation and effective third-party logistics.
    B. Supplier development and logistics
    C. Negotiations, supplier evaluation, supplier development, and contracts.
    D. An integrated supply chain.

49. A major issue in logistics is:
    A. Cost of purchases.
    B. Supplier evaluation.
    C. Product customization.
    D. Cost of shipping alternatives.

50. A more expensive shipper tends to provide:
    A. Faster shipments and lower holding costs
    B. Faster shipments and higher holding costs
    C. Slower shipments and lower holding costs
    D. Slower shipments and higher holding costs

51. Typically, the bullwhip effect is most pronounced at which level of the supply chain?
    A. Consumers
    B. Suppliers
    C. Wholesaler
    D. Retailers

Continued...

52. The two most important inventory-based questions answered by the typical inventory model are:
    A. When to place an order and the cost of the order.
    B. When to place an order and how much of an item to order.
    C. How much of an item to order and the cost of the order.
    D. How much of an item to order and with whom the order should be placed.

53. Extra units in inventory to help reduce stockouts are called:
    A. Reorder point.
    B. Safety stock.
    C. Just-in-time inventory.
    D. All of the above.

54. The difference(s) between the basic EOQ model and the production order quantity model is(are) that:
    A. The production order quantity model does not require the assumption of known, constant demand.
    B. The EOQ model does not require the assumption of negligible lead time.
    C. The production order quantity model does not require the assumption of instantaneous delivery.
    D. All of the above.

55. The Economic Order Quantity (EOQ) model with quantity discounts attempts to determine:
    A. the lowest amount of inventory necessary to satisfy a certain service level.
    B. the lowest purchase price.
    C. whether to use a fixed-quantity or fixed-period order policy.
    D. how many units should be ordered.

56. Which of the following decisions covers the longest time-period?
    A. Short-term scheduling
    B. Capacity planning
    C. Aggregate planning
    D. A master schedule

57. A visual aid used in loading and scheduling jobs is a:
    A. Gantt chart.
    B. Planning file.
    C. Bottleneck.
    D. Load-schedule matrix.

Continued...

58. The assignment method involves adding and subtracting appropriate numbers in the table to find the lowest _____ for each assignment.
    A. Profit
    B. Number of steps
    C. Number of allocations
    D. Opportunity cost

59. Cyclical scheduling is used to schedule:
    A. Jobs.
    B. Shipments.
    C. Machines.
    D. Employees.

60. Kanban is the Japanese word for:
    A. Car.
    B. Pull.
    C. Card
    D. Continuous improvement.

SECTION B: Short Essay (40 marks)

1. Describe briefly TWO (2) basic functions of a firm
(5 marks)

2. Briefly explain the different purpose of an organisation's mission and strategy.
(5 marks)

3. List out SEVEN (7) steps that are used to develop a forecasting system.
(7 marks)

4. Define briefly Process-chain-network (PCN) Analysis
(3 marks)

5. What is the main objective of Statistical Process Control (SPC). What can the operation manager do with the output of SPC in the production.
(5 marks)

6. Provide TWO (2) techniques that can be used in dealing with bottleneck operation?
(10 marks)

7. Identify FIVE (5) layout strategies that can be used by the organisation.
(5 marks)

[Full: 100 marks]
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